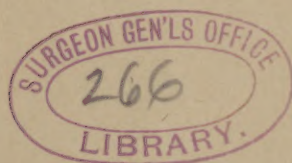


McClellan (Ely)

FIBROID TUMORS OF THE UTERUS.

By ELY McCLELLAN, M. D.

ASSISTANT SURGEON, U. S. A.



BEFORE THE KENTUCKY STATE MEDICAL SOCIETY, 1874.

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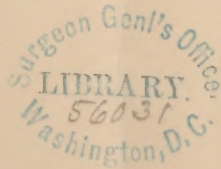
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FIBROID TUMORS OF THE UTERUS.

Mr. President and Gentlemen of the Kentucky State Medical Society:

I make bold to ask a portion of your valuable time to the consideration of that class of pathological changes to which the human uterus is peculiarly liable, and which are denominated fibroid tumors. The literature of this branch of gynecology is already rich in observed facts, and to its stores valuable contributions are being yearly made by illustrious observers.

Of tumors affecting the uterine structure the fibroid is the variety most frequently met with. So often indeed has this pathological condition been found that, did we place implicit faith in the statements of many eminent gynecologists, we could hereafter look upon women but as sentient uterine fibroids.

An examination of the statements of recognized authorities as to the frequency with which this morbid change occurs in the uterine structure is not only interesting, but instructive.

Klob affirms "that undoubtedly forty per cent of the uteri of females who die after the fiftieth year contain fibroid tumors."¹ Bayle states that "the fifth part of all women above thirty-five years old are affected with fibrous tumors of the uterus."² The American editor of Scanzoni, confining himself to one race, states that "perhaps we should not much err were we to say that among the blacks, at the North certainly, the female of forty without one or more fibroid uterine tumors would be the exception rather than the rule."³ West, cautious and exact, writes, "Fibrous tumors are generally regarded—and I

¹ Pathological Anatomy of Female Sexual Organs, Am. ed., p. 177.

² Liverpool Medico-surgical Journal, vol. 1, p. 61.

³ Diseases of the Sexual Organs of Women (translation), p. 239.

believe with truth—as the most frequent of all organic diseases of the womb;” and after passing many statistics in review he continues, “From these data we arrive at nothing more definite than the general conclusion that fibrous tumors of the uterus are very frequent, probably more frequent than cancerous diseases of that organ.”¹ Rigby writes, “The fibrous tumor is the most common and least dangerous of the structural changes which are observed to take place in the uterus.”² McClintock places himself on record: “Without question the most frequent disease of the uterus, if we except inflammations and their effects, are fibroid tumors.”³ Hewitt writes, “It is highly probable that the fibroid tumor of the uterus is very frequently present in cases where its existence is not suspected.”⁴ Marion Sims notes the frequency with which he has met with this class of tumors.⁵ Meadows, in his recent lectures, states that “fibroid tumors are the most common of all organic diseases of the uterus.”⁶ Billroth writes, “The localization of fibroma varies greatly; of all the organs the uterus is most frequently affected.”⁷

We have quoted authorities to this extent as rendered necessary by the evidence to the contrary which may be adduced from the statements of the following writers.

Pollock stated that “during a period of ten years out of five hundred and eighty-three female deaths in St. George’s Hospital, London, but thirty-nine were found to have fibroid tumors of the uterus.”⁸ Prichard and Lair state that “in eight hundred examinations made by them they met with but seven cases of uterine fibroids.”⁹ Braum and Chairi, that of two thousand four hundred and ninety-four post-mortem examinations of both sexes but twenty-five instances were found of the presence in the uterus of these tumors.

From this contradictory evidence—and but a portion of that existing in medical literature has been noted—we can but arrive at the conclusions upon which the opening assertion of this paper is

¹ Lectures on the Diseases of Women, Am. ed., p. 224.

² Constitutional Treatment of Female Diseases, Am. ed., p. 148.

³ Clinical Memoirs on Diseases of Women, London ed., p. 110.

⁴ Diagnosis, Pathology, and Treatment of Diseases of Women, p. 43.

⁵ Files of the London Lancet, and Uterine Surgery.

⁶ London Lancet, May 10, 1873.

⁷ General Surgical Pathology and Therapeutics (translation), p. 567.

⁸ London Lancet, February 7, 1852.

⁹ West, op. cit., p. 224.

based. Thomas, in noting the statement of Bayle, remarks, "Even supposing that his estimate is an exaggerated one, an idea of the frequency of the affection may be gathered from the fact of his venturing upon it."¹

The age, race, and social condition of a patient occupy an important status in the consideration of this form of disease. We are justified in presuming that the occurrence of uterine fibroids is most frequent between the twentieth and thirtieth years of life. Certain it is that they most frequently announce their existence during the height rather than in either the early or late stages of menstrual activity. Scanzoni considers that "the lesion is most common between the ages of thirty-five and forty-five; at least the cases beyond these limits in which the disease has attained a development which permits it to be diagnosed during life are relatively rare."² McClintock states, "This heterogeneous growth is met with at every age from twenty upward, but increasing in frequency up to forty-five or fifty." The earliest age at which a case came under his observation was twenty-three.³ Of the thirty-nine cases recorded by Pollock but one was under the age of thirty years.⁴ In the cases upon which Bayle bases his sweeping assertions all the women were over thirty-five years of age.⁵ West records twenty-one cases out of eighty-seven in which the disease occurred between the ages of twenty and thirty years; and, having compared the statistical tables of Braum, Chairi, and Malgaigne with his own, remarks, "If, however, instead of taking the age at which the patient first applied at the hospital, we draw our conclusions, as we ought rather to do, from the period at which the symptoms characteristic of the disease first manifested themselves, it will be seen that fibrous tumors and fibrous polypi are affections incidental to the season of sexual vigor much oftener than to the period of its decline."⁶

We are, however, unable to confine exclusively the occurrence of these growths to the periods of life referred to; for Davis extracts from an early volume of the German Ephemerides the case of a child five years of age, who died, as was supposed, of retention of urine, but in whose uterus a calculus the size of a pigeon-egg was discovered.⁷

¹ Practical Treatise on the Diseases of Women, p. 418.

² Op. cit., p. 239.

³ Op. cit., p. 110.

⁴ London Lancet, February, 1852.

⁵ Liverpool Medico-chirurgical Journal, vol. I, p. 61.

⁶ Op. cit.

⁷ Obstetric Medicine, London, 1834, p. 667.

Race, according to the majority of observers, exercises a decided influence on the development of this form of disease. They are more frequently met with among the *blacks* and *mixed races* than among the *whites*, and it is asserted by authority that few autopsies of negro women are made without one or more of these growths being discovered. Goodell notes in this connection a point of interest, that while the negress is liable to fibroid growths of the uterus she is comparatively free from ovarian disease and cancerous affections.¹

The development of uterine fibroids has been supposed to be influenced by the social condition of the subject. Bayle asserts that single women are more liable to this affection than those who are married.² Scanzoni's experience seemed to indicate that sterility had a certain influence in predisposing to the disease.³ West is of the opinion that the development of uterine fibroids is not influenced by the non-exercise of the sexual functions.⁴ McClintock writes, "A married or single life, sterility or fruitfulness, do not seem to have any influence in predisposing to the disease."⁵ Goodell says, "Sexual intercourse always aggravates their symptoms, and marriage is pretty sure to start the growth of one hitherto dormant." Bergeret, of whose work the most charitable expression is one of regret at its translation, writes, "The sanguineous congestion resulting from repeated frauds, instead of causing a morbid flow through the natural passages, may determine the same accident in the walls of the uterus, and this may result in the fibrous tumors so common in the body of the uterus. Most of the women whom I have attended of this kind of disease have had fraudulent connections,"⁶

A consideration of statistics will, in our opinion, lead to the conviction that it is among married women, or those subjected to frequent and prolific sexual intercourse, that this disease is most common; that it is the changes of the uterus incident to gestation that favor their development, rather than the congestions of uninterrupted menstruation or of non-fecundating sexual excitement.

Our knowledge of the causes which result in the formation and development of uterine fibroids is, to say the least, limited. Thomas in 1872 quotes the remark of Clarke in 1814, that nothing is known

¹ Philadelphia Medical Times, May, 1872.

² Liverpool Medico-chirurgical Journal.

³ Op. cit., p. 239.

⁵ Op. cit., p. 110.

⁴ Op. cit., p. 226.

⁶ Conjugal Onanism, p. 35.

respecting the cause of this disease as applicable to the present.¹ Meadows in 1873 follows upon nearly the same line. He says, "In regard to the causes of uterine fibroids we know no more, but certainly no less, of their origin than we do of the same or similar tumors in other parts of the body."² McClintock is of the opinion that a scrofulous diathesis is very favorable to their development.³ Churchill, that they are more common in persons of the lymphatic temperament.⁴ W. T. Jenks, of Philadelphia, reports several cases of uterine fibroids in which he found a blood-clot to be their nucleus.⁵

The etiology of uterine fibroids may be summed up as follows:

1. RACE: *the African or those of mixed blood being peculiarly liable.*
2. AGE: *the incidents of menstrual activity exercising a controlling influence.*

The congestions and extravasations of dysmenorrhœa, the stretching and weakening of the uterine fibers by repeated pregnancies, and the various accidents of parturition, probably exercise a greater influence in the occurrence of these adventitious growths than do the favorite causes of some writers; i. e., *the congestions from sexual intercourse and uninterrupted menstruation in its various phases.*

Upon one point, however, the evidence at our command is more nearly unanimous. It is asserted that the presence of these uterine tumors exercises a decided influence upon fecundity. From their presence during the period of menstrual activity, and governed by the position which they occupy in the uterine structure, impregnation may be impossible, abortions may be frequent, and lastly fatal complications may arise during or after labor by which the lives of both mother and child may be placed in jeopardy.

Tanner was of the opinion that fibroids are a cause of abortion by impeding the expansion and growth of the uterine tissue.⁶ West remarks, "Fibroid tumors of the uterus often render pregnancy, labor, and the puerperal state periods of great hazard; but it is easy to understand that when the growths proceed from the exterior of the

¹ Op. cit., p. 416.

² London Lancet, May 10, 1873.

³ Op. cit., p. 111.

⁴ On Diseases of Women, p. 248.

⁵ Philadelphia Medical Times, May 1, 1872.

⁶ Signs and Diseases of Pregnancy (London), p. 161.

womb they may not interfere with the mere term of utero-gestation."¹ Montgomery states "that, however large and numerous these tumors may happen to be, they do not always prevent conception; but they greatly disguise its results, and render its consequences much to be dreaded; though when of small size, few in number, and situated in the upper part of the organ, neither gestation nor delivery is necessarily affected by their presence."² He details the history of a lady who had two fibroids as large as walnuts on the anterior surface of the fundus uteri, whom he safely delivered from eight pregnancies; also two other cases complicated by fibroids in the same location (one as large as an orange) who were safely delivered—one lady in five, the other in three confinements. Dr. Eldridge recorded a case in which a fibrous tumor weighing two pounds was expelled thirty-eight days after the successful termination of a pregnancy.³

Uterine fibroids, sarcoma matricis, fleshy tubercle, subcartilaginous tumor, muscular tumor, hystereoma, as they were designated by the older writers,⁴ the *fibroma* and *myoma* of Virchow and Klobe, and the *myo-fibromata* of Thomas, are firm, hard, unyielding tumors of irregular surface, varying in size from an almost impalpable atom to a mass of many pounds in weight.

It is asserted by the majority of authorities that tumors of this class are seldom solitary; but that the morbid action once having been instituted, an indefinite number usually result. Others assume that the cases of solitary and multiple tumors are equally divided. Billroth states that they are rather more frequently multiple than single."⁵ Thomas possesses the uterus of a negress which contains thirty-five fibroids of every size, from a fetal head to that of a marble.⁶ Scanzoni records a case in which the walls of the uterus contained twenty-seven fibroids, the largest being the size of a hen-egg, and the smallest that of a walnut.⁷ Jones and Sieveking describe specimen No. 2,674 in the museum of the Royal College of Surgeons, London, as a uterus with eight or nine fibroids, varying from one to four

¹ Op. cit., p. 229.

² Exposition of the Signs and Symptoms of Pregnancy, p. 274.

³ Boston Medical and Surgical Journal, February 2, 1848.

⁴ Hunter, Baillie, Hooper, Davis.

⁵ General Surgical Pathology, p. 569.

⁶ Op. cit., p. 413.

⁷ Op. cit., p. 234.

inches in diameter.¹ In the museum of the University of Louisville is the uterus of a negress, who died at about the fiftieth year from unknown causes, on which thirty-one fibroid tumors may be counted, the largest the size of an orange, the smallest not greater than the head of a common pin.

Such instances are, however, comparatively rare, for it has generally been found in these cases of multiple tumors that one alone attains to any considerable size; the others, if they grow at all, grow slowly, and almost invariably the disproportion in size is strikingly evident. It is also to be observed as a marked provision of nature that in the vast majority of multiple fibroids they are of that variety which during their existence rarely produce fatal complications.

Virchow withdraws uterine fibroids from the class of fibromata, and designates them myomata, the latter term being strictly indicative of their early origin, resulting, as is generally accepted, from a morbid tendency to grow of some portion or portions of the muscular substance of the uterus. A section examined under the microscope exhibits "the same structure that the walls of the hypertrophied uterus have, inasmuch as it consists not only of fibrous connective tissue and vessels, but also of muscular fiber-cells."² Billroth writes, "There can be no doubt that those of them which consist chiefly of connective tissue, such as old uterine fibroids, should be called fibromata; but the younger tumors of this variety, with the same appearance and consistence, show little connective tissue, but numerous spindle-shaped cells."³

Meadows affirms "that these tumors are not mere hypertrophies, but are distinct growths, having their origin in a degenerative process, and not in one of exaltation; that there are in addition to the muscular fiber-cells a considerable proportion of cellular elements. In some instances the latter largely predominate, and the whole appearance of the tumor is much the reverse of what one would be led to expect in a fibrous tumor."⁴

Paget thus describes a striking peculiarity of these growths: "Such tumors may resemble in their tissues the substance of the uterus itself,

¹ Manual of Pathological Anatomy (London), p. 672.

² Virchow's Cellular Pathology, p. 487.

³ Op. cit., p. 565.

⁴ London Lancet, May 10, 1873.

and so far as the structures formed in excess are concerned we might regard the tumor as the result of a hypertrophy not essentially different from that which at the same time and rate may take place in the uterine walls around it. But an essential difference is in this, the uterus in its growth around the tumor maintains a normal type, though excited to its growth, if we may so speak, by an abnormal stimulus. It exactly imitates in vascularity and muscular development the pregnant uterus, and may even acquire the like power, and at length by contractions like those of parturition may expel the tumor spontaneously separated. But the tumor imitates in its growth no natural shape or construction; the longer it continues the greater its deformity."¹

In its growth a myoma is independent—that is, none of the tissues in which it is developed is included in the abnormal mass; but are displaced, pressed out of the way by the new growth, which subsists and maintains its connections with the uterine walls by but few and delicate blood-vessels, which pierce its areolar capsule. The degree of vitality is low; indeed by the older writers it was contended that no vascular connections existed between the morbid mass and the uterine wall in or on which it grows.

Fibroid tumors and *fibrous polypi* of the uterus should never be confounded, as they seem to be by some authors. Paget defines the distinction, "The fibrous polypi of the uterus, more properly so called, are continuous outgrowths of and from the substance of the uterus. . . . The fibrous tumors are discontinuous growths of similar tissue in or near, not of, the substance of the uterus."²

The position occupied by a myoma and the amount of uterine territory invaded by the growth present questions of vital interest, influencing not only the diagnosis but the prognosis in the case. Certain peculiarities have been observed by gynecologists, which may be briefly stated as follows: A myoma is rarely developed in the cervix uteri. By some authors it is stated that the development of even a slightly voluminous tumor in such location would be a very exceptional occurrence. By many the anterior wall is considered to be an unusual location; while others maintain that they are found with equal frequency in the different regions of the fundus and body of the uterus.

¹Surgical Pathology, p. 338.

²Surgical Pathology, p. 422.

From their location and degree of development, uterine fibroids have been divided into three distinct classes.

(a) *Subperitoneal or extra uterine*, which project from the uterus and are enveloped by the peritonæum;

(b) *Parietal or intra-mural*, which are covered upon all sides by the uterine tissue;

(c) *Intra-mural or submucous*, which occupy more or less of the uterine cavity, and enveloped by the mucous membrane.

To this classification modern gynecologists add—

(d) *Recurrent fibroids*; that variety which grow from the uterine mucous surface, and which are redeveloped as often as they may be removed.

In each of these varieties the symptoms, although developing upon the same general plan, vary both in their sequence and intensity. Menstrual disorders are almost invariably the primary symptoms. Months and even years may pass during which the intermenstrual periods become shorter, and the amount of the menstrual discharge increased. Dysmenorrhœa and a copious leucorrhœa follow. As the tumor increases in size the discomforts of pregnancy are added, and with them almost invariably reflex uterine symptoms. On the other hand, without the occurrence of any such symptoms, the patient may discover an abdominal tumor of whose presence she was previously unaware.

In thirty-two of the ninety-six cases tabulated by Dr. West the symptoms came on suddenly in patients who had previously imagined themselves quite well. In eleven of these cases it was with hemorrhage; in five it was with an inability to void the urine; in five it was with intense abdominal pain; in eleven it was the accidental discovery of a tumor in the abdomen.¹

In the primary symptoms some peculiarities are offered. In menorrhagia the flow of blood is intermingled with clots of greater or less size, but among them no shreds of membrane can be distinguished. The hemorrhage may appear during the intermenstrual period, and may become so constant that the period of menstruation is only marked by an increase in the hemorrhage. The pains described at first as "small, pricking, or tearing" gradually assume the character of those of parturition. At times these demonstrations

¹Op. cit., p. 229.

become painfully acute. The character of the pain and the amount of the discharge is stated by Meadows to be an index to the position occupied by the tumor. Great pain indicates that the location is near to the peritoneal surface; excessive discharges near to the mucus. A small tumor on the anterior wall will occasion more pain than one situated posteriorly, and the nearer the tumor is to the fundus the greater will be the pain; with the single exception of small tumors situated near the internal os uteri, which last occasion distressing dysmenorrhœa.¹ By McClintock this pain is referred to the uterus and not to the tumor, the latter being in his opinion utterly devoid of sensation.²

The leucorrhœal discharge, with which in the early stages of the disease the genitals are copiously bathed, is at first entirely mucous; but as the disease advances the discharge becomes thinner, and at times watery.

The discomforts of pregnancy referred to are those caused by mechanical pressure. The patient complains of weight and fullness in the pelvis. She is tormented at times with a constant desire at micturition, and suffers from constipation. Hemorrhoids, varices, and œdema of the labia and lower extremities are frequent accompaniments. The reflex symptoms consist of nausea, vomiting, cephalalgia, cardialgia, and in rare cases eclampsia.

In each of the three varieties of uterine fibroids peculiarities of symptoms are described which demand especial consideration.

(a) *Subperitoneal or Extra-uterine*.—Myomata of this class are found to be singularly free from the majority of the symptoms enumerated. They grow more rapidly, attain a greater size, and cause greater physical discomfort than those of the other varieties. They are attended with a marked symptom, in a decided diminution of the menstrual flow. This peculiarity is noted by numerous authors, and is especially elaborated by West and Meadows.³

The uterus is hypertrophied, although not to the degree that it will be found in the other varieties. But little if any increase will be found in the length of the uterine cavity, and in the majority of instances the entire outline of the tumor may be traced through the abdominal walls.

¹ London Lancet, May 17, 1873.

² Op. cit., p. 123.

³ London Lancet, May 17, 1873, p. 689.

(b) *Parietal or Intra-mural*.—In tumors of this variety the uterine cavity is lengthened and rendered tortuous by the bulging in of the wall containing the growth. The weight of the uterus is increased, while its mobility is diminished. As the tumor increases in size the transverse diameters of the uterus are enlarged, the cervix is shortened, and the os may be sufficiently dilated to admit of the introduction of the index finger.

Uterine displacements, to a greater or less degree, are invariably produced, governed by the location of the tumor and the size it may attain. Thus we may find the uterus descending deeply into the pelvic cavity, or pressed strongly against the sides of the pelvis, or escaping through the superior strait, the vaginal canal is placed upon the stretch. The uterine functions are impaired, the initial symptoms are early developed, conception rarely occurs, or the patient, becoming pregnant, aborts at an early month. Myomata of this class may become, from uterine action alone and unaided, either extra- or intra-uterine; in other words, a process of spontaneous enucleation is accomplished. This action is ascribed to "the continuous peristaltic action of the uterine walls."

(c) *Intra-uterine or Submucous*.—The symptoms which have been enumerated are present, aggravated and imperative in their demands upon the vital powers of the patient. Submucous fibroids are almost invariably attended by enormous hemorrhages at the menstrual periods, and during the interval of menstruation there is constant loss of blood. The patient will suffer vastly from the expulsive efforts to which the uterus is excited by the growth, and all of the discomforts and constitutional disturbances which attend myomata of the preceding varieties will be intensified.

(d) *Recurrent fibroids of the uterus* are identical with similar growths in other portions of the body. They rapidly develop all the symptoms of the submucous variety. It is stated that they are attended with no special manifestations of pain. In this situation, as in other structures, the capsule of the tumor is liable to rupture, and a fungoid growth protrudes. Removal of this (fortunately rare) form of the disease is invariably followed by its redevelopment.

In the study of uterine fibroids it is well to dwell upon the points of differential diagnosis between them and various affections with

which at first sight they may be confounded. Too much stress can not be laid upon this point; it not infrequently happening that even after repeated examinations and prolonged observation errors of diagnosis are made. Uterine fibroids may be mistaken for, or the converse may occur—

1. *Uterine Polypi*, whose symptoms strongly assimilate the myoma of the submucous variety. Kirwisch notes that in uterine polypi the metrorrhagia is invariably preceded by a complete menstrual cessation of from six to twelve weeks, and that the hemorrhage is always accompanied by violent contractions and intense pain. In a case of polypus the os uteri is sensibly dilated at a much earlier date than it is in fibroid tumors. Polypi rarely attain any considerable size.

2. *Chronic Engorgement of the Uterus*.—A careful study of the symptoms presented is necessary to differentiate, and it is only by a prudent selection and rejection that a correct diagnosis may be established. It is particularly to be noted that the menstrual disturbances differ widely. In chronic engorgement “the insufficient menstruation, with dysmenorrheal expulsion of a false decidua, the result of continued hyperæmia of the uterine mucous membrane, and an invariable painful congestion of the ovaries,”¹ presents a marked outline of the disease.

3. *Peri-uterine Cellulitis or Abscess*.—A tumor from this cause is immovable, exceedingly sensitive, and its presence is accompanied by great constitutional disturbance.

4. *Pelvic Hematocoele*.—Intense constitutional disturbance is a primary symptom. Meadows notes as of value in the differential diagnosis that “a hematocoele varies as to its consistency with time. To the touch at first it is soft, then doughy, lastly it becomes hard and solid, and gradually decreases in size.”²

5. *Uterine Flexion*.—A small fibroid tumor may be mistaken for either of the malpositions of this class, or a flexion may itself be mistaken for a myoma. A careful use of the sound will afford a true and reliable method of differentiating.

6. *Ovarian Tumor*.—To diagnose a uterine fibroid from an ovarian tumor in some instances becomes utterly impossible without resorting to an explorative incision through the abdominal wall. Meadows lays down as a rule in differentiating in such cases “the peculiar elastic,

¹ Scanzoni, op. cit.

² London Lancet, May 17, 1873.

though firm and tense, feel which the ovarian tumor presents to the hard, solid feel of a fibroid." The prominent diagnostic differences may be summed up as follows:

OVARIAN TUMOR.

1. No menstrual disorder or uterine discharges.
2. Of rapid growth, producing great constitutional disturbance.
3. Situated more on one side than the other; rarely movable; fluctuating, smooth, elastic, but tense.
4. External manipulation produces no change of the uterine position.
5. Auscultation gives no sound.

UTERINE TUMOR.

1. Decided menstrual disturbance and profuse discharges.
2. Of slow growth, and the constitutional effects are tardy in appearing.
3. Located centrally; movable, non-fluctuating, firm, hard, nodular.
4. External manipulation produces decided changes in the position of the uterus.
5. Auscultation almost invariably reveals a distinct bruit.

7. *Pregnancy*.—Care should always be had in differentiating under this head. The similarity presented by the reflex uterine symptoms, the identity of the placental bruit, renders it not surprising that errors of diagnosis should be made. Davis relates the case in which a young woman experienced a sudden cessation of the menses, and as she confessed to an amour, pregnancy was diagnosed. Apparently all the symptoms were present; but the abdominal enlargement continued beyond the ninth month, and at the termination of the eighteenth month the patient died, undelivered. The autopsy disclosed an exceedingly large fibroid tumor of the uterus.¹ When called upon to diagnose in such a case it is well to bear in mind the tragic story told by Bedford,² of a young life blasted by a professional diagnostic error, which terminated in foul slander and a broken-hearted death-bed, and err, if err we must, upon the side of mercy.

8. *Fecal Impaction*.—In this abnormal condition there is presented intestinal disorder and no menstrual disturbance. External manipulation of the abdominal tumor produces no uterine change as to position. Meadows relates a case in which such an accumulation gave rise to a condition analogous to that of a fibroid tumor.

9. *Vesical Calculus* may be mistaken for a fibroid of the anterior wall of the uterus. The absence of all uterine symptoms beyond

¹Op. cit., p. 663.

²Clinical Lectures on the Diseases of Women and Children, p. 50.

those of weight, frequent and painful micturition, should lead to a rigid explorative examination.

10. *Uterine Cancer*.—The rapid progress of the disease and the characteristic fetor of the discharges are pathognomonic. Meadows relates a case in which a submucous fibroid, which had become pedunculated and partly protruded through the os uteri, was diagnosed as an epithelioma. A more careful examination determined that the tumor, constricted by the cervix, had at its lower portion taken on a sloughing process, which gave rise to a ragged, irregular mass occupying the site of the cervix uteri, and to an intensely fetid discharge.¹

With all the aids which science has placed at our disposal for the investigation of obscure cases, the difficulty in differentiating between uterine fibroids and some of the diseases noted is so great that errors may occur in some cases unless resort is had (*dernier ressort*) to examination by means of the explorative incision, or to the artificial dilatation of the anus and rectum. The last-named procedure, instituted by Simon of Heidelberg,² affords a valuable means for establishing a true diagnosis. This method, resorted to with delicacy and care, is by no means the medical atrocity³ as by some writers it has been styled; especially as it affords unfortunate females a means of vindicating their chastity should it be called in question by a careless or hasty diagnosis.

The opinions of eminent gynecologists expressed in the prognosis of this class of disease may be summed up as follows: Uterine fibroids undoubtedly must be classed as benign or non-malignant growths. They rarely make rapid progress; seldom induce symptoms that indicate a fatal termination. The symptoms, even when severe, may in the majority of instances be controlled. After the menopause the bulk of the tumor will not increase; on the contrary, it is apt to become diminished. As a rule, the prognosis is not unfavorable.

By some authors, as Ashwell, Sir James Y. Simpson, and Atlee, of Philadelphia, it is held that fibroid tumors are or may become the seats of cancerous degeneration; but this theory undoubtedly arises from the fact that the two diseases may occur simultaneously, or that a cancerous growth may take place upon the surface of the tumor.

¹ London Lancet, May 17, 1873.

² American Journal of Medical Sciences, April, 1873, p. 548.

³ Philadelphia Medical Times, December 27, 1873, p. 203.

In entering upon the study of the various methods which have been proposed in the treatment of uterine fibroids, the most natural classification will be—

1. *The efforts of nature to effect a cure;*
2. *Treatment by palliative measures;*
3. *Treatment by surgical measures.*

I. THE EFFORTS OF NATURE TO EFFECT A CURE.—Myomata may during the life of the patient undergo various alterations which are characterized by Thomas¹ as diseases to which they are liable, and by Billroth² as anatomical metamorphoses. These efforts or changes again demand a classification, and they are generally treated of under the following heads:

- (1) *Separation of the pedicle;*
- (2) *Atrophy or absorption;*
- (3) *Direct expulsion of the tumor;*
- (4) *Disintegration;*
- (5) *Calcareous transformation.*

(1) *Separation of the Pedicle.*—A fibroid of the extra-uterine class, favored by its position and assisted by the contractions of the muscular fibers behind and around them, not infrequently are extruded from the uterus, to which they remain attached by a pedicle which may become so extenuated that but slight force may cause a total separation of the tumor from the uterus. The tumor may now maintain an independent existence, or may be transplanted upon some other surface. The same remarks apply to tumors of the submucous variety; they may be expelled by uterine contractions, and in rare cases a separation of the pedicle may occur.

(2) *Atrophy or Absorption.*—The growth of myomata, it is well known, ends at the menopause, after which period the tumor not only ceases to grow, but in the majority of cases becomes atrophied. Occasionally a cure is effected by means of a slow process of absorption. One of the most interesting cases on record of this rather rare occurrence is that reported by Kidd, of Dublin, as follows: "In 1852 an unmarried lady was the subject of a subperitoneal fibrous tumor of the uterus the size of a goose-egg. In 1859 the abdomen was as large as at the seventh month of pregnancy, and until 1863 the patient

¹Op. cit., p. 413.

²Op. cit., p. 566.

suffered frightfully from all the mechanical inconvenience of this large mass, as well as from the reflex symptoms. The pain was frightful; at one time the pressure of the tumor threatened to occlude the rectum; but in 1863, during an irregular menstruation, she began to pass 'flesh-like masses' which were supposed to have been coagula. The menstruation soon ceased, the abdomen gradually diminished in size, the pains and sickness were arrested, and the abdominal tumor disappeared without its departure being in any way noticed, except from the diminution in size, which was so gradual as only to be known by the result and not by the process. In 1867 no trace of the tumor could be found."¹

(3) *Direct expulsion of the Tumor*.—It occasionally happens that a tumor of the intra-mural class may, in consequence of the suppuration and decomposition of the tissue which envelops it, become detached from the uterine wall, and, having fallen into the cavity of the uterus, be expelled by the contractions of that organ. For an illustration we are again indebted to Dr. Kidd; "A lady having placed herself under treatment, a considerable tumor was diagnosed in the interior of the uterus. An appointment was made for operation, but it was unavoidably postponed. The night of the postponement she had a rigor; the next day there was excessive constitutional disturbance, which continued for upward of a fortnight, when a fibroid was expelled per vagina."²

(4) *Disintegration*.—As a result of inflammatory action the myoma may be deprived of its nutrition, and a disintegration of its substance may result. From the same cause the mass may be the seat of collections of pus, or of purulent, watery, or sanguineous fluids, or gangrenous degeneration may occur. An illustration will be found in the well-known case of Marion Sims, in which he evacuated more than twenty ounces of a colored serum from a fibroid occupying the entire posterior wall of a uterus.³ Gardner has recorded cases in which inflammation of the tumor ended in suppuration, this resulting from incidents attendant upon gestation.⁴ Thomas describes an apoplexy of the mass resulting from the rupture of one or more of the delicate blood-vessels with which it is supplied.⁵ Sir James Clarke records "the case of a woman twenty-eight years of age who was the

¹ Dublin Journal of Medical Science, August, 1872.

² *Ibid.*

³ Clinical Notes on Uterine Surgery, p. 108.

⁴ Scanzoni, op. cit., p. 238 (note).

⁵ Op. cit., p. 486.

subject of a tumor of the fundus the size of an orange. From this tumor she had experienced no pain, but a rather profuse menorrhagia. Sexual intercourse caused extreme pain, and some weeks after marriage large masses were passed by the vagina. The case recovered, became pregnant, and was safely delivered at full term."¹ In this case undoubtedly the irritation induced by marriage caused the death of the tumor. The cavities caused by the process of disintegration noted are occasionally found empty, leaving open the supposition that the fluid has been absorbed.

(5) *Calcareous Transformation*.—It is by no means rare to find that by a process of calcification, or even of true ossification,² the growth of a myoma is arrested. Occasionally the mass thus changed becomes detached and is discharged from the vagina, which fact undoubtedly gave rise to the uterine calculi of the older writers; but as early as 1787 Dr. Baillie announced that these calcareous concretions originated as fibroid tumors.³

That a true ossification may occur in a myoma is denied by the majority of authorities. Paget describes the changes which occur to "a calcareous degeneration consisting in an amorphous and disorderly deposit of the salts of lime and other bases in combination with or in the place of the fibrous tissue."⁴ Meadows expresses strongly the opinion that this calcareous deposit is the result of or a consequence upon the atrophy of the tumor.⁵ In the majority of instances the process of calcification is within the substance of the tumor; but instances are recorded in which the deposit has been upon the exterior, encasing the tumor in a defined shell.

Many and interesting cases are recorded of this transformation. Davis notes several cases recorded by the fathers, the most notable being a case described by Hippocrates, in which, after violent expulsive pains, a calculus the size of a "spindle-ball" was found in the vagina; a case reported by Ambrose Paré, of a nun fifty years of age, who, after months of severe uterine pain, expelled from the uterus a calculus the size of a duck-egg; and a case of Louis, of a patient who died from a pleurisy, in the substance of whose uterus were thirty calculi, the smallest the size of an almond.⁶ Jones and Sieveking report the interesting case of an old lady who died at the age of seventy-two

¹ McClintock, op. cit., p. 113.

² Billroth, op. cit., p. 566.

³ Lee.

⁴ Surgical Pathology, p. 428.

⁵ London Lancet, July 5, 1873.

⁶ Op. cit., p. 666.

years, in whose uterus was found a tumor weighing five pounds, and as hard as marble.¹

This process of calcification, although it may be looked upon as an effort of nature to arrest the growth of the tumor, at times induces complications dangerous to the patient. McClintock, under the head of "the spontaneous elimination of uterine tumors,"² cites the following cases: 1. Turner relates a case in which a large calcified tumor attached to the back of the uterus caused death by compression and rupture of a fold of the ilium, consequent upon a fall on the pavement. 2. Matthews Duncan records the case of a patient who died of peritonitis, whose uterus contained two calcified tumors. Two holes were found in the peritonæum, made apparently by the tilting upward of two thick scales of the tumor. Fleming reports a case in which a calcified tumor springing from the anterior wall of the uterus had made its way by ulceration into the bladder, producing all the symptoms of vesical calculus, and in which some fragments of the tumor had become detached and were found in the cavity of the bladder.

2. TREATMENT BY PALLIATIVE MEASURES.—By such treatment we understand all therapeutic, surgical, and mechanical measures which may be adopted to arrest hemorrhage, allay pain, check the growth of the tumor, or lessen the discomforts arising from the bulk and weight as well as the position which the tumor may assume.

To arrest hemorrhage it is recommended that prior to each menstrual period some precautionary treatment be adopted. Absolute rest in the recumbent posture should be rigidly enjoined. A saline cathartic may be exhibited for the relief of the engorged pelvic viscera. On the appearance of the hemorrhage ergot should be administered in doses the amount and frequency of which should be decided by the urgency of the symptoms. Warm applications to the spine and iced enemata are recommended by Scanzoni.³ The hemostatics upon which McClintock relies are gallic acid, alum, tincture of Indian hemp, and mercury.⁴ Ergot and gallic acid in large doses singly and combined are recommended by Goodell.⁵ Meadows found the most efficient remedies to be the ethereal peracetate of iron, the acetate of lead, and ergot.⁶

¹ Op. cit., p. 675.

² Dublin Quarterly Journal, February, 1868, p. 20.

³ Op. cit.

⁴ Op. cit., pp. 144, 145.

⁵ Medical and Surgical Reporter, February, 1874.

⁶ London Lancet, July 12, 1873.

By the majority of authorities ergot is recommended as the main and in reality the only hemostatic upon which dependence can be placed. It should be exhibited both by the mouth and hypodermically. From this opinion some authors dissent, contending that many cases are met with in which ergot may be administered without effect other than an increase in the hemorrhage. This opinion, however, is undoubtedly based upon cases of intra-uterine tumors, in which the ergot, by exciting the muscular contractions of the uterus, may occasionally induce increase of the hemorrhage. By the gentlemen who deny the power of ergot mercury is vastly lauded.

Therapeutic measures failing to arrest the hemorrhage, three expedients remain, one or all of which should unfailingly be resorted to.

(1) *The Tampon*.—It is strongly advised, and rationally, to lose no time in plugging the vagina with soft, dry sponges, or if they may not readily be obtained, with strips of linen, lint, or cotton. Wherever it is practicable, the speculum having been introduced, the cervix should be steadied with the vulcella, and the largest possible tent inserted within the os, or the cervical canal should be packed with strips of lint saturated with a styptic solution.

(2) *Styptic Injections to the Cavity of the Uterus*.—Many medicated solutions have been recommended, such as solutions of the salt of Monsel, tincture of iodine, nitric acid, and solid nitrate of silver. Savage uses a solution of iodine, iodide of potash, alcohol, and water, and claims not only perfect hemostatic power, but a specific influence on the tumor. Routh, Duncan, Barnes, and others advocate the use of a solution of the perchloride of iron. The procedure of Duncan is worthy of careful consideration. He writes, "After the length and direction of the uterus has been ascertained by means of the ordinary sound a hollow one is passed into the organ, and a syringe containing the solution—about one drachm—is fitted closely into the orifice at the proximal end of the probe, and the contents gently thrown in." We are able to offer testimony as to the efficacy of a strong solution of Monsel's salt in arresting a uterine hemorrhage which had reduced the patient to extremis; nor in this case did the coagula cause the "very severe forcing pains" on which Sims bases his objection to the use of solutions of iron.

(3) *Free and complete Incision of the Cervix Uteri*.—By Baker Brown, Nélaton, and McClintock the almost simultaneous discovery

was made that whenever a permanent dilatation of the cervix uteri was effected by means of free incisions the hemorrhage resulting from the presence of uterine fibroids almost invariably ceases.¹ In some cases, despite this operation, the flooding is re-established, and Atlee recommends an incision through the capsule and into the substance of the tumor.² This procedure has been found almost invariably successful; but the credit of success alone can be given to Atlee; for as early as 1831 Davis made three mechanical attempts by means of incisions to dislodge a uterine fibroid, but he was unsuccessful, save that the patient "ceased to be subject to hemorrhages of any considerable amount."³

During the intermenstrual period it is advisable to adopt such rational treatment as may not only replace the blood lost, but if possible lessen the hemorrhagic dangers of the next period. The continued use of ergot and iron at once is suggested. Mental and physical quietude are essentially necessary. Meadows found that the prolonged use of the chloride of calcium was followed by a marked diminution in the amount of the hemorrhage. *Cannabis indica*, *digitalis*, *arsenic*, *ipecacuanha*, *opium*, *mercury*, *infusion of vinca major*, *muriate of ammonia*, *bromide of potash*, *phosphorus*, and the *continued galvanic current* have all distinguished advocates, who have hoped not only to arrest the hemorrhage, but to exert a specific effect on the bulk of the growth. Goodell recommends equal parts of the *muriate tincture of iron*, dilute *phosphoric acid*, and *fluid extract of ergot* in drachm-doses. Dr. Protheroe Smith strongly recommends the combination of *ergot* with *borax*.

Full baths of natural or artificial sea-water or the water of Kreuznach, frictions with *iodine* or *bromine*, the applications of compresses saturated with very hot water, local blood-letting to diminish congestion, or the plan of Rigby of injecting into the uterine cavity a mixture of mercurial ointment and iodide of potassium, are of importance.

To allay pain opium or some of its salts must be relied upon. It is suggested that they always be exhibited hypodermically. Goodell extols the effect obtained from the use of *cannabis indica*, and cautions against the use of chloral hydrate, which in his opinion induces hemorrhage in these cases.

¹ McClintock, op. cit., p. 149.

² Trans. Am. Med. Association, vol. 6, 1853, p. 558.

³ Op. cit., p. 657.

To check the growth of the tumor, each of the therapeutic agents which have already been enumerated have been at one time or another in vogue. Failure attended the use of each, and when hope was well-nigh exhausted a new era opened, and ergot in the hands of Hilderbrandt marked the dawning. The efficacy of this procedure is now so well known, and the results originally claimed have been verified in so many hands, that any extended reference to the procedure is unnecessary. Bengelsdorf concludes from his recent experiments that the influence of ergot on these tumors when exhibited hypodermically is confined exclusively to the period of menstrual activity, and that after the menopause no diminution in bulk will follow the most prolonged use. This conclusion, however, is yet to be verified.

In this connection we would state that we have many times used the fluid extract of ergot without dilution in the treatment of uterine fibroids, and without the least ill effect. Indeed there is not even the pain produced which invariably follows the introduction of glycerine below the skin.

The mechanical means by which the discomforts arising from the bulk and weight of the tumor, as well as the position which it may assume, may be modified are worthy of careful consideration. To this point as early as 1814 Sir Charles Clarke called attention, and upon these means at one time were the main dependence in treatment. When the tumor has not attained a sufficient size to lift the uterine mass above the brim of the pelvis many of the discomforts may be relieved by the use of pessaries. When the tumor has escaped into the abdominal cavity, and the pendulous abdomen becomes a source of vast discomfort, the mechanical support of Banning will meet the indications. When the growth of the tumor is confined to the pelvis, and becomes so great as to interfere with the pelvic viscera, it becomes necessary to dislodge it, for which purpose Barnes's bags will be of advantage.

3. THE TREATMENT BY SURGICAL MEANS.—By which treatment we understand any efforts that may be made tending to the radical destruction of the morbid growth. It is advanced as a fundamental axiom that surgical procedures should be resorted to only under two circumstances. 1. *When the growth is so situated as to render its removal not absolutely fatal to the patient.* 2. *When the disease is threatening the patient's life.*

The various surgical procedures may be advantageously studied under the arrangement adopted by Thomas:

- (1) *Excision*;
- (2) *Ecrasement*;
- (3) *Enucleation*;
- (4) *Sloughing*;
- (5) *Gastrotomy*.

(1) *Excision*, which is applicable only to small fibroids which may be within reach after dilatation of the cervix.

(2) *Ecrasement*, which is applicable to all cases in which it may be possible to surround the entire or a large portion of the tumor. In the latter case the operation must be repeated until the entire mass is removed and the pedicle is reached.

(3) *Enucleation*.—The honor of having instituted this method of dealing with fibroids of the uterus must be equally shared by Velpeau, Amusat, and Atlee; but to Matthews Duncan we are indebted for the study which has done so much for the development of the operation. It is recommended, by the majority of authorities, as more prudent in tumors of large growth to effect but a partial enucleation by force, and to depend upon the efforts of the uterus, aided by ergot, to finally dislodge the mass. Duncan recommends evulsion in cases in which spontaneous enucleation has been already begun. Mr. John Scott, surgeon to the Hospital for Women, Soho, London, recommends the advisability of completing the removal of the tumor at the primary operation, in view of the rapidity with which in some cases fresh adhesions are formed. He relates the successful termination of an operation by torsion applied to the ultimate attachment of the tumor.¹

In all cases of enucleation it is of importance to postpone the final operation upon the fibroid until the incised cervical walls have completely healed, thus lessening the risks of the absorption of the purulent discharges which must result from the subsequent operation.

(4) *Sloughing*.—It has been proposed to imitate nature and to establish inflammatory action in these tumors with the hope that from the partial disintegration of the mass a spontaneous enucleation would result. Sir James Y. Simpson formed an eschar in the fibroid by means of caustic potash. Baker Brown gouged a deep circular pit into the substance of the tumor, and plugged the cavity thus formed with lint

¹ London Lancet, December 20, 1873.

dipped in olive-oil. Greenhalgh plunged the actual cautery to the depth of an inch into the mass. The result obtained by each observer was a gradual protrusion of the bulk of the tumor through the opening thus made in its capsule.

(5) *Gastrotomy*.—The removal of subperitoneal fibroids when they are pedunculated by the abdominal section presents no greater dangers than those incurred in the performance of ovariectomy. But when the tumor is closely attached to the uterus or imbedded in its walls the operation can only be justified—1. *When serious complications are produced by the great size of the tumor;* 2. *When all other efforts to preserve the life of the patient have failed.*

Gastrotomy for the removal of uterine fibroids has been opposed by a majority of gynecologists with, if possible, a greater intensity than was ovariectomy in the early days of that operation. So violently at one time did the discussion rage that the doors of professional courtesy were closed upon the advocates of the operation; and in 1872 the Committee of the Academy of Medicine, Paris, condemned the procedure, reporting that “the extirpation of a uterine tumor is always a serious matter; the uncertainty that exists of completing the operation, the risk of fatal hemorrhage, the nervous shock, peritonitis, and secondary hemorrhage;” and they concluded by asserting that “the success obtained by some surgeons proved nothing.”

Thomas lays down as an axiom that “no operator should undertake gastrotomy for uterine neoplasms without being prepared, if necessary, to remove the uterus with the tumor; for sometimes the connection is so intimate that an exact localization of the tumor is out of the power of the most skillful diagnostician.” The mortality from this operation, however, as shown by the present state of statistical tables, offers scarcely a forlorn hope to the patient. Of thirty-six cases in which the uterus was removed by gastrotomy but seven recovered; and of the recoveries five are credited to American surgeons.

Although the percentage of deaths after these operations from shock, hemorrhage, peritonitis, and septicæmia are so great, there is scarcely a doubt that the expectations of Storer and Thomas will be realized, and that from “improved methods of hemostasis and cleansing of the peritonæum”—of the latter, in our opinion, drainage through Douglass’s cul de sac will be most prominent—the risks of the operation will be reduced to those of ovariectomy.

There remains for consideration the management of pregnancy complicated by uterine fibroids.

We have already seen that in the subperitoneal variety, especially those which have become pedunculated and have escaped into the abdominal cavity, the uterus is affected but to a slight degree, and that rarely beyond a hypertrophy of its tissue. We find therefore but little inconvenience arising from its presence during pregnancy beyond that produced by increased weight. Indeed as gestation advances the increased pressure upon the tumor may result in its absorption. But very different is the case when a pedunculated tumor becomes impacted during gestation in the recto-uterine space: then labor will be attended with the most frightful consequences.

The intra-mural and intra-uterine varieties almost invariably terminate a pregnancy by an early abortion; indeed some authors are of opinion that the presence of such a tumor is an impediment to conception. Cazeaux admits that tumors of this variety may exert an injurious influence upon the course of gestation, and become a cause of abortion when they are of large size, but denies that they have any effect when small. At the same time he writes, "The physiological evolution of pregnancy may accelerate wonderfully the increase of the pathological tumor, which may continue and even increase after delivery in some cases, while in others there is a notable diminution and even disappearance."¹

The dangers which surround a pregnant woman who is the subject of myomata may well be noted for earnest study. Ashwell has demonstrated that the presence of the contents of a gravid uterus upon a fibroid in the uterine wall may set up an inflammation in the tumor so frightful as to result in the death of the patient. A myoma from its location may offer such obstruction as to make a labor either difficult, dangerous, or impossible. The presence of the tumor in the uterine wall may seriously interfere with the expulsive force of the organ, or from the resistance which it opposes to muscular contractions may cause a rupture of the uterine tissue. The tumor may be crushed or bruised during the expulsive efforts of the uterus, from which profuse hemorrhage may occur during and after delivery. From the bruising which the tumor will almost inevitably receive during the progress of a labor a fatal peritonitis may occur, or degeneration of the mass may

¹ Theoretical and Practical Treatise on Midwifery, p. 372.

develop septicæmia. A uterine fibroid may cause the retention of the placenta and membranes, the removal of which may place the patient's life in danger from the excessive hemorrhage which inevitably follows. A fibroid tumor may, from the irritation produced by its presence, induce the most exhausting "after-pains" in a labor which otherwise has terminated without complications.

When a female in whose case a uterine fibroid has been clearly diagnosticated becomes pregnant, what course is to be pursued? The injunction against coitus had certainly been issued by the medical attendant, but experience shows that there is scarcely a disease formidable or loathsome enough to prevent sexual intercourse. It is well to order that "unmastered importunity and too submissive affection must be met by separate beds and by uncommunicating rooms;" but the "too submissive affection" will always be displayed, attended though it be with "pain of body and anguish of mind" that entitles the devoted wife to a martyr's crown.

It may be safe to allow a pregnancy to advance in a case in which the tumor of the uterus is without doubt diagnosed as of the extra uterine variety, providing always that it is the abdominal and not the pelvic cavity which is invaded by the growth. But even in such cases eternal vigilance must be the price paid for the safety of the patient, and at the seventh or eighth month, although all may have progressed most favorably, the question of the necessity for a premature labor should receive careful attention.

When a myoma of either the intra-mural or intra-uterine varieties, no matter what may be its size or situation, is complicated by pregnancy, our opinion is strongly in favor of inducing that result to which we have seen nature so frequently direct her efforts. It is safe to assert that the vast majority of gynecologists concur in such conclusion; but upon this subject, as upon all others, dissenting voices are heard. Some practitioners prefer to expose the woman to all the dangers of the puerperal state, when complicated by the existence of such tumors, rather than destroy an organism upon which the light and breath of life has not yet come. Others, trusting and hoping in the slim chance which absorption may afford their patients, or that perchance the delivery may be safely effected, allow the pregnancy to proceed, not infrequently awakening from their delusion to the vivid horrors of such a parturition.

In a careful reading of the literature on this subject, with special reference to collating experiences upon the management of a labor complicated as described, nothing has been found which for conciseness and practicability surpasses that of the Clinical Lectures of Goodell, to which reference has already been made. We quote in detail:

"In all cases of foreseen obstruction from this cause, if called in soon enough, your duty is clearly to induce labor at as early a period of gestation as the necessities of the case may demand. If these are not urgent, stave off the operation until viability is reached. On the other hand, keep no terms with a fetus that threatens the life of its mother. But should labor at term have set in before you are summoned, no one plan of treatment can be laid down. The occasion will exact all your pluck and skill. If the tumor is movable, push it up out of the way, and in order to prevent it from falling back at once apply the forceps.

"If the tumor can not be dislodged, deliver either by the forceps or by version; by so doing you save the woman's forces and lessen the risks. If septic, reduce the bulk of the tumor by the trocar. If within easy reach and wholly in front of the child's head, attempts at enucleation may be made. Craniotomy will often be demanded, and whenever the pelvic inlet is reduced to a mere chink there will be no alternative but the cesarian section, an operation under such circumstances almost necessarily fatal from hemorrhage.

"Whenever you feel convinced that the child can not be born alive perforate and crush its head early, so as to diminish the chances of injury to the tumor. Whenever you are in doubt as to this give the mother and not the child the benefit of the doubt. Should post-partum hemorrhage occur, ply your patient with large doses of ergot and swab out the womb with Monsel's solution."

The foregoing pages have been prepared and are submitted not as a treatise, but as a study, in which the attempt alone is made of condensing the rays which the light of experience and observation have thrown upon a most interesting form of disease.

